

## Claims

1. A flame arrestor for a flowing explosive gas (4),  
having a flame barrier (10, 20, 30) with a large  
5 number of defined passage gaps (17, 18), whose gap  
cross section is set with regard to the properties  
of the flowing gas (4), characterized in that  
second gaps (18) with a smaller gap cross section  
are arranged adjacent to the first gaps (17)  
10 having the selected gap cross section.
2. The flame arrestor as claimed in claim 1,  
characterized in that the gaps (17, 18) are  
implemented on a disk-like flame barrier (10, 20,  
15 30).
3. The flame arrestor as claimed in claim 2,  
characterized in that the gaps (17, 18) are  
arranged on turns (12, 13) formed in the shape of  
20 rings or spirals.
4. The flame arrestor as claimed in claim 3,  
characterized in that a first number of turns (12)  
having first gaps (17) and a second number of  
25 turns (13) having second gaps (18) are provided  
alternately.
5. The flame arrestor as claimed in claim 4,  
characterized in that a turn (12) having first  
30 gaps (17) and a turn (13) having second gaps (18)  
are provided alternately.
6. The flame arrestor as claimed in one of claims 3  
to 5, characterized in that the disk-like flame  
35 barrier (10, 20, 30) is formed by a corrugated  
metal strip (15, 15') wound spirally together with  
a smooth metal strip (14), a first corrugated  
metal strip (15) having larger corrugations (16)  
forming the turns (12) having the first gaps (17),

and a corrugated metal strip (15') having smaller corrugations forming the turns (13) having the second gaps (18).

- 5    7.    The flame arrestor as claimed in claim 3, characterized in that the turns (12, 13) have the first and second gaps (17, 18) over their length.
- 10    8.    The flame arrestor as claimed in claim 7, characterized in that, over the length of the turns (12, 13), in each case a first number of first gaps (17) and a second number of second gaps (18) are arranged alternately one after another.
- 15    9.    The flame arrestor as claimed in claim 7 or 8, characterized in that the disk-like flame barrier (10, 20, 30) is formed by a corrugated metal strip wound spirally together with a smooth metal strip (14), and in that the corrugation of the  
20    corrugated metal strip alternately has shorter or longer lengths of the corrugations in order to form the first and second gaps (17, 18).
- 25    10.   The flame arrestor as claimed in one of claims 1 to 9, characterized in that the ratio of the number of second gaps (18) to the number of first gaps (17) varies over the area of the flame barrier (30).
- 30    11.   The flame arrestor as claimed in claim 10, characterized in that the ratio of the number of second gaps (18) to the number of first gaps (17) decreases from inside to outside.
- 35    12.   The flame arrestor as claimed in one of claims 1 to 11, characterized in that the second gaps (18) all have the same gap cross sections.

13. The flame arrestor as claimed in one of claims 1 to 12, characterized in that the second gaps (18) are formed with at least two different gap cross sections.
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14. The flame arrestor as claimed in one of claims 1 to 13, characterized in that the first and second gaps (17, 18) are formed with the same gap lengths.
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15. The flame arrestor as claimed in one of claims 1 to 14, characterized in that the cross-sectional area of the second gaps (18) amounts to at most 50% of the cross-sectional area of the first gaps (17).
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